VINNIK, K. (Stalinskaya oblast', g.Zhdanov)

Thoughtful friend of steel workers. Okhr.truda i sots.strakh.
3 no.4:62-63 Ap '60.   (MIRA 13:6)
          (Zhdanov--Steel industry--Hygienic aspects)

VINNIK, K., uchitel'

The activist group is the support of the savings bank. Fin. SSSR 22 no.4:51-52 Ap '61.
(Zhdanov—Savings banks)

(MIRA 14:4)

AKOPOV, A.; TUGARINOV, I.; TIMANOVSKIY, I.; NECHAYEV, M.; SEMENOV, V.;
VINNIK, K.; SOMIN, V.

Let us welcome the 22d Congress of the CPSU with excellent achieve-
ments. Fin. SSSR 22 no.10:49-59 O '61.   (MIRA 14:9)

1. Zamestitel' nachal'nika Mosgorfinupravleniya (for Akopov).
2. Zamestitel' zaveduyushchego Leningradskim oblfinotdelom (for
Tugarinov). 3. Nachal'nik byudzhetnogo upravleniya Ministerstva
finansov Kazakhskoy SSR (for Timanovskiy). 4. Zaveduyushchiy
Ul'yanovskim oblfinotdelom (for Nechayev). 5. Zaveduyushchiy
Volgodskim oblfinotdelom (for Semenov).
                    (Finance) (Taxation)
            (Bezhetsk District--Insurance)

VINNIK, K.

Summer vacation of the petr-leum workers of the Chechen-Ingush
A.S.S.R. Neftianik 9 no.9:26 S '64   (MIRA 18:2)

VINNIK, K.

"Cooking here is better than at home." Obshchestv.pit. no.5:8
My '59. (MIRA 12:8)
(Makhachkala—Restaurants, lunchrooms, etc.)

VINNIK, K.

Improvement of labor protection and safety engineering.
Neftianik 8 no.6:27 Je '63.
(MIRA 16:11)

VINNIK, K. (g.Pyatigorsk)

Culinary expert from Piatigorsk. Obshchestv.pit. no.4:23-24
Ap '61.   (MIRA 14:3)
          (Cookery)

VINNIK, K.

VINNIK, K. (Zhdanov)

Azovstal's fire brigade. Pozh.delo 3 no.10:15 O '57.   (MIRA 10:11)

(Zhdanov--Fire prevention)

VINNIK, K.

Automobile club of the university. Neftianik 7 no.9:29 S '62.
(MIRA 16:7)

(No subject headings)

VINNIK, L. A.

"Lymphography and lymphadenography of the lungs in
tuberculosis and collapse theraphy."

to be presented at the Radiology Congress, Karlovy Vary,
Czechoslovakia, 10-14 June 63

VINNIK, L. A.

Vinnik, L. A. - "The functional status of the physiological system of the connective tissues in lung tuberculosis in adults", Trudy Astrakh. gos. med. in-ta, Vol. IX, 1948, P. 111-15.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949).

VINNIK, L.A.

Lymphanogiography and lymphadenography of the lungs in tuber-
culosis and collapse therapy. Cesk. rentgen. 18 no.4:248-250
Jl'64

1. Astrachansky lekarsky institut a krajska protituberkulezni
poradna.

VINNIK, L. A.

25942   Vinnik, L. A. Gemodinamichekiye sdvigi pri raneniyakh myagkikh
          tkaney s. zamedlennoy regeneratsiey. V sb: Problemy vosstanovit.
          Lecheniya invalidov Otechestv. voyny. Astrakhan', 1948, s. 214-19.

          SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

VINNIK,. L.A., kandidat meditsinskikh nauk; CHERVOVA, V.I.

Functional state of the reticulo-endothelial system in tissue
therapy. Klin.med. 33 no.6:86 Je '55   (MLRA 8:12)

1. Iz kafedry fakul'tetskoy terapii (zav.-prof. D.G.Oystrakh)
Astrakhanskogo meditsinskogo instituta.
     (TISSUE EXTRACTS) (RETICULO-ENDOTHELIAL SYSTEM)

VINNIK, L.A., kandidat meditsinskikh nauk (Astrakhan')

Some considerations on M.B.TSuker's article "On diseases of the
central nervous system of tubercular etiology." Klin.med. 34 no.9:
88-90 S '56.   (MIRA 9:11)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav. prof. D.G.Oystrakh)
Astrakhanskogo meditsinskogo instituta i Astrakhanskogo oblastnogo
protivotuberkuleznogo dispansera (glavnyy vrach A.P.Demidova)
          (CENTRAL NERVOUS SYSTEM, dis.
              caused by tuberc.)
          (TUBERCULOSIS, compl.
              CNS dis.)

VINNIK, L.A., kandidat meditsinskikh nauk (Astrakhan')

Use of calcium and vitamin D in tuberculosis of the lungs. Klin.
med. 34 no.12:82-84 D '56.   (MIRA 10:2)

1. Iz Fakul'tetskoy terapevticheskoy kliniki (zav. - prof. D.G.
Oystrakh) Astrakhanskogo meditsinskogo instituta i Astrakhanskogo
oblastnogo protivotuberkuleznogo dispansera (glavnyy vrach A.P.
Demidova)
        (TUBERCULOSIS, PULMONARY, ther.
            calcium & vitamin D)
        (CALCIUM, ther. use
            tuberc., pulm., with vitamin D)
        (VITAMIN D, ther. use
            tuberc., pulm., with calcium)

VINNIK, L.A.,kandidat meditsinskikh nauk.

Clinical evaluation of the hippuric acid liver function test;
clinico-anatomical parallels. Terap. arkh. 38 no.1:63-68 '56
(MIRA 9:6)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav.-prof. D.O.
Oystrakh) i kafedry patologicheskoy anatomii (zav.-prof. G.O.
Nepryakhin) Astrakhanskogo meditsinskogo instituta.
(LIVER FUNCTION TEST,
hippuric acid (Rus))
(HIPPURATES,
liver funct. test (Rus))

VINNIK, L.A., kandidat meditsinskikh nauk

Pharmacological action on the central nervous system in pulmonary
tuberculosis. Vrach.delo no.7:761 Jl '57.   (MLRA 10:8)

1. Fakul'tetskaya terapevticheskaya klinika (zav. - prof. D.G.
Oystrakh) Astrakhanskogo meditsinskogo instituta i Astrakhanskogo
oblastnogo protivotuberkuleznogo dispansera
        (TUBERCULOSIS)   (NARCOTICS)

VINNIK, L.A., dotsent; SUTYRINA, G.V.; BOLDYREVA, A.A.; SHEVCHENKO, A.M.

Growth rate of Mycobacterium tuberculosis and isoniazid
concentration in resected lungs. Prob. tub. no.1:75-78 '65.
(MIRA 18:12)

1. Fakul'tetskaya terapevticheskaya klinika (zav.- prof.
A.M. Nogaller)Astrakhanskogo meditsinskogo instituta i
Astrakhanskiy oblastnoy protivotuberkuleznyy dispanser
(glavnyy vrach A.P. Demidova).

VINNIK, L.F.; SIDOROV, K.A.

Early diagnosis and surgical tactics in cancer of the thyroid gland.
Vop. onk. 11 no.10:95-100 '65.   (MIRA 18:10)

1. Iz kliniki Voyenno-morskoy i gospital'noy khirurgii (nachal'nik
prof. Ye.V.Smirnov) i kliniki fakul'tetskoy terapii (nachal'nik -
prof. V.A.Beyyer) Voyenno-meditsinskoy ordena Lenina akademii im.
S.M.Kirova.

L 59591-65   EWT(1)/EWA(h)   Peb   Ж

ACCESSION NR: AP5017455   UR/0020/65/162/005/1041/1044

AUTHOR: Vinnik, L. P.

TITLE: The structure of 4-6 second microseisms

SOURCE: AN SSSR. Doklady, v. 162, no. 5, 1965, 1041-1044

TOPIC TAGS: microseism structure, microseism observation, seismography

ABSTRACT: Microseisms with periods of 4-6 seconds generate serious difficul-
ties during seismological observations. Earlier (mostly three-station) ob-
servations seem to indicate that they are generated by oscillations of large
water masses. To check these earlier results, the author utilized a new
method of directional reception utilizing a system of 7 stations with vertical
seismographs and three-component devices. The field data discussed in the
paper were collected during a month of observations (October 1961) in eastern
Kazakhstan in the Ust'-Kamenogorsk district. All stations utilized the USF
seismographs (eigenperiod of 1.5 sec.) with F 117/3 photoelectric amplifiers
and GK-VII galvanometers; the registration was accomplished on the RS-2 instru-
ment with a 240 mm/min. development. At 5 sec. the amplification was equal to

Card   1/2

L 59591-65
ACCESSION NR: AP5017455

20,000. The most striking result was the constant presence of a component with a velocity of 10-20 km/sec. and an energy between 10 and 40% of the total energy of the process. Some 4 km/sec. waves (found often) could be surface waves. All the observed waves carried approximately 50% of the total energy; the rest was contained in the irregular component whose nature is not yet clear. The author believes that all components of the microseismic background have the same origin. "The author thanks V. I. Keylis-Borok for the formulation of the problem, and I. P. Pasechnik, N. M. Pruchkina and K. A. Kossoya for help during the investigations." Orig. art. has: 4 formulas and 3 figures.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR (Institute of Earth Physics of the Academy of Sciences, SSSR)

SUBMITTED: 18Dec64   ENCL: 00   SUB CODE: ES

NO REF SOV: 001   OTHER: 000

Card 2/2

VINNIK, L.A., dotsent; FILIMONOV, Yu.I.

External respiration under controlled physical stress in patients
with pulmonary tuberculosis (veloergometric studies). Probl. tub.
42 no.3:27-34 '64.   (MIRA 18:1)

1. Fakul'tetskaya terapevticheskaya klinika (zav. - prof. A.M.
Nogaller), kafedra fizicheskogo vospitaniya (zav. - I.A.Kolomeytsev)
Astrakhanskogo meditsinkogo instituta i Astrakhanskoy oblastnoy
protivotuberkuleznyy dispanser.

VINNIK, L.A.

Healing processes in pulmonary tuberculosis under combined
treatment with pneumothorax and antibacterial preparations.
Probl.tub. 38 no.4:33-41 '60.   (MIRA 14:5)
          (PNEUMOTHORAX)   (TUBERCULOSIS)

VINNIK, L.A. (Astrakhan')

"Some remarks concerning Professor B.L. Mazur's article, "Clinical
aspects and differential diagnosis of tuberculosis." Kaz. med.
zhur. no. 4:100-102 Jl-Ag '60.   (MIRA 13:8)
                    (TUBERCULOSIS)   (MAZUR, B.L.)

VINNIK, L.A., kand.med.nauk (Astrakhan')

Problem of tuberculosis in general practice. Klin.med. 36
no.12:30-36 D '58.   (MIRA 12:6)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav. - prof.D.O.
Oystrakh) Astrakhanskogo meditsinskogo instituta (dir. - dots.
S.V.Zakharov) i Astrakhanskogo oblastnogo protivotuberkuleznogo
dispansera (glavnyy vrach A.P.Demidova).
            (TUBERCULOSIS
                in GP (Rus))

VINNIK, L.A., kand.med.nauk; VISHNEVETSKIY, F.Ye.; MINSKAYA, N.M.; PESCHANSKIY, V.S.

Effect of phthivazid on the cardiovascular system in tuberculosis.
Vrach. delo no.1:95-96 '59.   (MIRA 12:4)

1. Kafedra fakul'tetskoy terapii (zav. - prof. D.G. Oystrakh) i
kafedra patologicheskoy anatomii (zav. - prof. M.S. Brunshteyn)
Astrakhanskogo meditsinskogo instituta.
        (ISONICOTINIC ACID)   (CARDIOVASCULAR SYSTEM)

VINNIK, L.A.

VINNIK, L.A., kand.med.nauk

Some problems of therapy in lung agscess. Sov.med. 21 no.8:94-98
Ag '57.   (MIRA 10:12)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav. - prof. D.G.
Oystrakh) Astrakhanskogo meditsinskogo instituta.
          (LUNG DISEASES, ther.
             abscess (Rus))
          (LUNGS, abscess,
             ther. (Rus))

VINNIK, L.A.

Therapeutic pneumothorax and antibacterial preparation in complex
therapy of pulmonary tuberculosis. Suvrem med., Sofia no.10:64-71
'60.

1. Iz Fakultetskata terapevtichna klinika pri Astrakhanskiia
meditsinski institut (Zavezhdasht prof. D.I.Oistrakh [deceased])
i Astrakhanskiia oblasten protivotuberkulozen dispanser (Glaven
lekar A.P.Demidova)
    (PNEUMOTHORAX ARTIFICIAL)
    (ANTITUBERCULAR AGENTS ther)

VINNIK, L.M.; GRINBERG, R.Ya.; KAMINSKIY, Ya.A.; KLEPIKOV, V.D.; KUZNETSOV,
A.M.; KUCHENEV, N.I.; STRUZHESTRAKH, Ye.I.; TISHIN, S.D.; KHARITONOV,
A.B.; TSEYTS, I.E.; SHAPIRO, I.I.; SHAPIRO, M.Ya.; ANAN'YAN, V.A.,
retsenzent; VASIL'YEV, D.T., retsenzent; GORETSKAYA, Z.D., retsenzent;
KARTSEV, S.P., retsenzent; KEDROV,S.M., retsenzent; KOMISSARZHEVSKAYA,
V.N., retsenzent; KOPERBAKH, B.L., retsenzent; KORBOV, M.M., retsenzent;
LEONOV, N.I., retsenzent; LUR'YE, G.B., retsenzent; NOVIKOV, V.F., re-
tsenzent; KHARITONOV, A.B., retsenzent; GAL'TSOV, A.D., red.; VOL'SKIY,
V.S., red.; KHISIN, R.I., red.; SEMENOVA, M.M., red. izd-va; MODEL', B.I,
tekhn. red.

[Handbook for establishing norms in the manufacture of machinery] Spra-
vochnik normirovshchika-mashinostroitelia v tomakh. Moskva, Gos. na-
uchno-tekhn. izd-vo mashinostroit. lit-ry. Vol.2. [Technical norms for
machine-tool operations] Tekhnicheskoe normirovanie stanochnykh rabot.
1961. 892 p.   (MIRA 14:11)
    (Machinery industry)   (Factory management)

MIKHAYLOV, D.V.; VINNIK, L.M.; SLUCHAYEV, P.N.; SULYAGIN, V.I.;
BARYKOVA, G.I., red.izd-va; GORDEYEVA, L.P., tekhn.red.

[Norms for the wear, strength and consumption of metal-
cutting tools] Normy iznosa, stoikosti i raskhoda rezhu-
shchego instrumenta. Moskva, Gos.nauchno-tekhn.izd-vo mashi-
nostroit.lit-ry, 1961. 174 p.

(MIRA 15:2)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye nauchno-
issledovatel'skikh i proyektnykh organizatsiy. Nauchno-issle-
dovatel'skoye byuro tekhnicheskikh normativov. 2. Nauchno-
issledovatel'skoye byuro tekhnicheskikh normativov (for
Mikhaylov, Vinnik, Sluchayev, Sulyagin).
      (Metal-cutting tools--Standards)

VINNIK, L.M.; GRINBERG, R.Ya.; KAMINSKIY, Ya.A.; KLEPIKOV, V.D.; KUZNETSOV,
A.M.; KUCHENEV, N.I.; STRUZHESTRAKH, Ye.I.; TISHIN, S.D.; KHARI-
TONOV, A.B.; TSEYTS, I.E.; SHAPIRO, I.I.; SHAPIRO, M.Ya.; ANAN'YAN,
V.A., retsenzent; VASIL'YEV, D.T., retsenzent; GORETSKAYA, Z.D.,
retsenzent: KARTSEV, S.P., retsenzent; KEDROV, S.M., retsenzent;
KOMISSARZHEVSKAYA, V.N., retsenzent; KOPERBAKH, B.L., retsenzent;
KORBOV, M.M., retsenzent; LEONOV, N.I., retsenzent; LUR'YE, G.B.,
retsenzent; NOVIKOV, V.F., retsenzent; GAL'TSOV, A.D., red.; VOL'-
SKIY, V.S., red.; KHISIN, R.I., red.; SEMENOVA, M.M., red. izd-va;
MODEL', B.I., tekhn.red.

[Reference book for establishing norms in the manufacture of
machinery; in 4 volumes] Spravochnik normirovshchika-
mashinostroitelia; v 4 tomakh. Moskva, Gos. nauchno-tekhn.
izd-vo mashinostroit. lit-ry. Vol.2. [Establishing technical norms
for operating machine tools] Tekhnicheskoe normirovanie stanoch-
nykh rabot. Pod red. E.I.Struzhestrakha. 1961. 392 p.
(MIRA 14:8)

(Industrial management)   (Machine tools)

29575
S/049/61/000/005/002/013
D218/D306

$9.9865 (1109, 1327)$

AUTHOR: Vinnik, L. P.

TITLE: On grouping low-frequency seismographs

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofiziches-
            kaya, no. 5, 1961, 643-648

TEXT: The equivalent circuit of a single seismograph with galva-
nometer detection is illustrated in Fig. 1. R_s is the resistance
of the pendulum coil, r_g is the resistance of the galvanometer
frame, R_1 R_2 and r are additional resistances included in the cir-
cuit. The present paper is concerned with a seismograph group con-
nected as shown in Fig. 2 (series-parallel connection), where
$\bar{R}_s = R_s + R_1$ and $\bar{r}_g = r_g + R_2$. It is shown that the differential
equation relating to the displacement of the soil x, the deflec-
tion of the galvanometer φ and the time t is of the form $\dddot{\varphi} + a\ddot{\varphi} +$
$+ b\ddot{\varphi} + c\dot{\varphi} + d\varphi = -e\dddot{x}$ where the coefficients a, b, c, d and e are

$\mathcal{X}$

Card 1/3

29575
S/049/61/000/005/002/013
D218/D306

On grouping low-frequency ...

constants. It is pointed out that the structure of this differential equation is very similar to the well-known differential equation for a single seismograph; the only difference lies in the values of the constants. A formula is derived for the magnification of a group. The theory is then applied to a one-dimensional group in which the individual seismographs are identical mechanically but have different electrodynamic constants. The frequency characteristics are then given for two-dimensional groups, in particular, a single ring, two rings and four rings. It is suggested that these circular groups may be convenient in detecting first arrivals of body waves due to earthquakes and explosions. It is shown that circular groups can be designed to have highly selective properties in the frequency range 1 - 10 c/s. There are 4 figures and 3 Soviet-bloc references.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: November 15, 1960

Card 2/3

29575
S/049/61/000/005/002/013
D218/D306

On grouping low-frequency ...
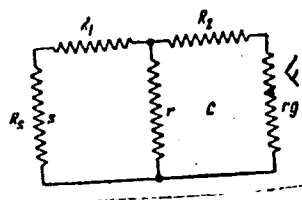
Fig. 1
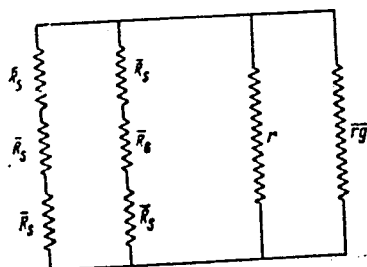
Fig. 2

Card 3/3

L 10742-63   EWT(1)/BDS--AFFTC/ESD-3--TF
ACCESSION NR: AP3002026   S/0049/63/000/006/0350/0860

                                                56
                                                53

AUTHOR: Vinnik, L. P.

TITLE: Space-time filtration of a seismic signal

SOURCE: AN SSSR. Izv. Ser. geofizicheskaya, no. 6, 1963, 850-860

TOPIC TAGS: microseismic noise, grouping of seismographs

ABSTRACT: A mathematical method is outlined for determining the optimum
grouping of seismographs on the basis of the computation of the spectral density
of interferences. The usual computation of spectral density as a Fourier
transform of the three-dimensional function of the intercorrelation of micro-
seismic oscillations in time is too cumbersome when applied to experimental
measurements. The proposed method presents several simplified constructions
which give satisfactory results in certain cases. Thus, when the micro-
seismic field is isotropic, area study can be replaced by profile study. The
computed correlation interval between two points represents the optimum distance
between seismographs. When the microseismic background consists of a large
number of plane waves propagating with the same velocity in different directions

Card 1/3

L 10742-63
ACCESSION NR: AP3002026

and when the $f_i(t)$ of each wave has the same autocorrelation function $R(\tau)$, the microseismic field is considered to be isotropic. For an individual wave

$$R_i(\tau,r) = R(\tau + r \sin \varphi_i/v),\qquad (1)$$

where v is wave velocity, φ is the angle between the wave front and the direction of propagation along distance r. The intercorrelation of two different waves at any distance will equal zero. The total activity of all waves is expressed as

$$R(\tau,r) = \sum_i R_i(\tau,r).\qquad (2)$$

The function $R(\tau)$ can be expanded into the sum of cosines of component harmonics. For $R_i(\tau,r)$, each of these components (if its amplitude is considered to be 1) can be represented by

$$R_i(\tau,r) = \cos(\omega\tau + \omega r \sin \varphi_i/v).\qquad (3)$$

Card 2/3

L 10742-63
ACCESSION NR: AP3002026   3

The harmonic component of this frequency when $R(\tau, r)$ is found by integration
at the angle of approach, φ is

$$\frac{1}{2\pi} \int_0^{2\pi} \cos(\omega\tau + \omega r \sin\varphi/v) \, d\varphi = \cos\omega\tau \, I_0(wr/v) \,, (4)$$

where I_0 is the Bessel zero-order function of the first kind. "The author
thanks V. I. Keylis-Borok and V. F. Pisarenko for discussion and valuable
advice." Orig. art. has: 7 figures and 21 formulas.

ASSOCIATION: Akademiya nauk SSSR. Institut fiziki Zemli (Academy of Sciences
SSSR. Institute of Physics of the Earth)

SUBMITTED: 07May62   DATE ACQ: 16Jul63   EHCL: 00

SUB CODE: 00   NO REF SOV: 006   OTHER: 001

Card 3/3

ACCESSION NR: AP4038146

AUTHORS: Vinnik, L. P.; Pruchkina, N. M.

TITLE: Investigating the structure of short period microseisms

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 5, 1964, 688-700

TOPIC TAGS: microseism, seismograph, random process, surface wave, short period vibration, photoamplifier F 117/3, galvanometer GB IV, oscillograph POB 12

ABSTRACT: Microseisms in the frequency range 0.5-5 cycles have been investigated. The method of analysis is based on the concept of a microseismic background as a statistical homogeneous random process, permitting use of the theory of steady random functions. The model considers two contributing sources: 1) the wave (regular) component and 2) vibrations not propagated to any great distance (irregular). The first is rather strong, the second weak. Data were obtained from three vertical seismographs (natural period of 1.5 sec), with F-117/3 photomultiplier and GB-IV galvanometer attached. The record was obtained on the photographic paper of a POB-12 oscillograph. Field observations were made in eastern Kazakhstan in the summer of 1961, in a hilly area on exposed granite bedrock, far from man-made noise. Correlation analysis indicates that the field of

Card 1/2

ACCESSION NR: AP4038146

the vertical component in short-period microseisms may have been formed by super-position of two or three surface waves from distant sources (distances greater than the wave length) with irregular vibration. The velocity of the surface waves is computed to be about 3000 m/sec, and the energy contribution is generally more than half the total energy involved in the record. The correlation interval of the irregular vibration is less than 400-600 m. Spectral analysis confirms the view that low-frequency contribution has added to the wave component. Conclusions cannot be final; they need critical analysis by confrontation with new experimental data. It appears probable, however, that the short-period waves are genetically related to longer-period first-order microseisms. The experiments were performed by L. P. Vinnik, programming was attended to by N. M. Pruchkina, field work and data processing were done by A. S. Deniskuv, V. P. Kirillina, and V. N. Tyulyukova. "In conclusion, the authors express their sincere thanks to V. F. Pisarenko, V. I. Keylis-Borok, and I. P. Pasechnik for valuable suggestions and for aid in the work." Orig. art. has: 6 figures, 1 table, and 14 formulas.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Physics of the Earth)

SUBMITTED: 26Jun63   DATE ACQ: 12Jun64   ENCL: 00

SUB CODE: ES   NO REF SOV: 002   OTHER: 002

Card 2/2

L 24797-66   EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(l)/ETC(m)-6   IJP(c)

ACC NR: AP6006952   (N)   SOURCE CODE: UR/0381/65/000/006/0009/0015

AUTHORS: Braynin, E. I.; Vinnikov, L. Ya.

ORG: Institute Giproniselektroshakht, Donets (Institut "Giproniselektroshakht")

TITLE: Modeling problem in metal defectoscopy on an EGDA integrator by the potential drop method

SOURCE: Defektoskopiya, no. 6, 1965, 9-15

TOPIC TAGS: / electric potential, defectoscope, electrode potential, model, steel, metal film / EGDA-9-60 integrator, integrator,

ABSTRACT: A planar modeling technique was used on an EGDA-9/60 integrator to solve the complex potential drop problem in the determination of defects in metals. Two electrode contact methods were used: a defectoscope with electrodes soldered to the metallic surface at two points; and a defectoscope with a thin metallized film deposit adhering to a thick metallic wall. In the first case, equipotential lines are drawn on the metal surface between the two electrodes with and without defects, and the presence and magnitude of the defects are determined from the ratio of potential drop K, with and without the defect. Similar equipotential lines are drawn between the electrodes of the second defectoscope. To evaluate the sensitivity of the method, the potential drop ratio K is plotted against the

UDC: 620.179.18

Card 1/2

L-24797-66

ACC NR: AP6006952

ratio s_1/L, where s_1 is the distance between adjoining electrode current and potential, and L is the overall distance between the electrodes. The sensitivity is seen to increase as L decreases and s_1 increases. Orig. art. has: 7 figures and 1 table.

SUB CODE: 14, 09/ SUBM DATE: 10Jun65/ ORIG REF: 004

Card 2/2

VINNIK, M.A.; AGRANOVSKAYA, A.I.; SEMENOVA, N.N.

X-ray diffraction and microstructure study of phase relations in
the formation of barium-cobalt hexaferrite $Ba_3Co_2Fe_{24}O_{41}$ (Co_2Z).
Izv.AN SSSR.Neorg.mat. 1 no.7:1177-1183 Jl '65.   (MIRA 18:9)

VINNIK, M.A.

Phase relations in the system $BaO - CoO - Fe_2O_3$. Zhur. neorg. khim.
10 no.9:2137-2144 S '65.   (MIRA 18:10)

L 21221-66   EWT(m)/EWP(t)   LJP(c)   JD
ACC NR: AP6003811   SOURCE CODE: UR/0181/66/008/001/0269/0272

AUTHORS: Vinnik, M. A.; Erastova, A. P.; Saksonov, Yu. G.

ORG: none

TITLE: Investigation of the cation distribution in barium hexaferrites

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 269-272

TOPIC TAGS: barrium compound, ferrite, magnetic moment, crystal symmetry, cation, x ray analysis, saturation magnetization

ABSTRACT: The investigated substance $Ba_2Me_2^{2+}Fe_{12}^{3+}O_{22}$ (Me^{2+} stands for Co, Ni, Zn, Cu, Mg, and other metals) has exhibited in various experiments a magnetic moment which differs appreciably from those calculated theoretically by various authors under the assumption that the Me^{2+} ions are located in the spinel blocks of the ferrite structure (E. W. Gorter, Proc. IEE, 104B, Suppl. No. 5, 255, 1957). It is shown, however, that the calculated values and the experimental values

Card   1/2

L 21221-66

ACC NR: AP6003311

of the magnetic moment are in better agreement if it is assumed that Gorter's hypothesis is in error and that the Me^{2+} and Fe^{3+} are statistically distributed over the S and T blocks in both tetrahedral and octahedral positions. The cation distribution in the barium hexaferrite, obtained from the measurements of the specific saturation magnetization by the Weis method (P. Weis, Arch. sci. phys. nat. v. 29, 175, 1910) is then compared with the cation distribution obtained by x-ray structure analysis and the two are shown to be in agreement within the limits of experimental accuracy. The formulas for the cation distributions are tabulated for these ferrites with Mg, Zn, Co, Cu, Mn, and Ni. The dependence of the results on the quenching and cooling of the ferrite is briefly discussed. The data show in addition that in hexaferrites, as in spinels, the Ni^{2+} and Co^{2+} have an affinity to octahedra, while the ions Zn^{2+} and Mn^{2+} to tetahedra. Orig. art. has: 2 formulas and 2 tables.

SUB CODE: 20/   SUBM DATE: 30Jul65/   ORIG REF: 002/   OTH REF: 004

Card   2/2 dle

VINNIK, M.A.

VINNIK, M.A.

Biological accumulation of trace elements in soils under the
forest canopy. Trudy Vor. gos. zap. no.13:179-181 '61.
(MIRA 16:8)

(Voronezh Preserve—Minerals in soil)

COUNTRY	:	USSR
CATEGORY	:	Soil Science. Physical and Chemical Properties of Soil.
ABS. JOUR.	:	RZhBiol., No. 4, 1959, No. 15368
AUTHOR	:	Vinnik, M.A.; Konnova, Ye.N.
INST.	:	Moscow Univ.
TITLE	:	Iodometric determination of Iron in Soils by the Moore-Treadwell Method.
ORIG. PUB.	:	Vestn. Mosk. un-ta, 1956, No.1, 89-93

ABSTRACT : The Gan-vindish method of iodometric determination of Fe in soils is widely used in soil-chemical laboratories. The results of determinations by this method are compared to those obtained by the Treadwell modification. The recovered data are identical, but the Moore-Treadwell technique is simpler and permits faster results.

-- F.I. Shcherbak

Card: 1/1

13

L 2301-66

ACCESSION NR: AP5022272   UR/0363/65/001/007/1177/1183
                                           549.73:539.24

AUTHOR: Vinnik, M. A.; Agranovskaya, A. I.; Semenova, N. N.

TITLE: X-ray diffraction and microstructural study of phase relationships in
the formation of barium cobalt hexaferrite Ba sub 3 Co sub 2 Fe sub 24 O sub 41
(Co sub 2 Z)

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965,
1177-1183.

TOPIC TAGS: barium compound, cobalt compound, iron compound

ABSTRACT: The object of the work was to study the phase relationships during the
formation of Co_2Z and to establish the temperature region of its existence. The
compound was synthesized from ferric oxide, cobalt oxide, and barium carbonate
by pressing and sintering powder mixtures, and the phase composition of the
products was determined by X-ray diffraction and microstructural examination.
It is found that Co_2Z does not form directly from the original oxides, but by
means of the intermediate compounds $BaFe_{12}O_{19}$ (M) and $Ba_2Co_2Fe_{12}O_{22}$ (Co_2Y). The
compound Co_2Z starts to form at 1150C, and is stable when heated in air up to

Card 1/2

L-2301-66

ACCESSION NR: AP5022272

/

1350C. Above 1350C, it decomposes into $BaCo_2Fe_16O_27$ (Co_2W), $BaFe_2O_4$ (B), $BaFe_12O_19$ (M), and the solid solution $Co_\zeta Fe_{1-\zeta}^2 O_4$ (S'); this decomposition is due to the reduction of Fe^{3+} to Fe^{2+} at high temperatures. The compounds Co_2Y and Co_2W also decompose above 1250 and 1300C, respectively. "The authors are deeply grateful to A. A. Shvarts for constant interest in this work." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 22Mar65   ENCL: 00   SUB CODE: IC, GC

NO REF SOV: 001   OTHER: 005
Abitrary Symbols used by authors to disignate various phases in their paper.

$M=BaFe_12O_19$, $B=BaFe_2O_4$, $S=CoFe_2O_4$, $S'=Co_8Fe_{1-\delta}^{2+}Fe_2^{3+} O_4$, $Co_2Y=Ba_2Co_2Fe_12O_22$,

$Co_2Z = Ba_2Co_2Fe_24O_41$, $Co_2W=BaCo_2Fe_16O_27$

Card   2/2

ACC NR: AP7006228   *(A)*   SOURCE CODE: UR/0078/67/012/001/0038/0043

AUTHOR: Vinnik, M. A.; Agranovskaya, A. I.; Semenova, N. N.

ORG: none

TITLE: X-ray diffraction and microstructural study of the phase relationships in the formation of barium cobalt hexaferrite $BaCo_2Fe_{16}O_{27}$

SOURCE: Zhurnal neorganicheskoy khimii, v. 12, no. 1, 1967, 38-43

TOPIC TAGS: barium compound, cobalt compound, ferrite

ABSTRACT: The compound $BaCo_2Fe_{16}O_{27}$, designated Co_2W, was synthesized by a solid phase reaction from Fe_2O_3, Co_3O_4 and $BaCO_3$, and the phase composition of the products (kept at 500-1440°C for 4-20 hr, then quenched in air or furnace-cooled) was determined by x-ray diffraction and microstructural methods. Co_2W does not form directly from the initial oxides, but via the intermediates $BaFe_{12}O_{19}$ (barium hexaferrite) and cobalt ferrite $CoFe_2O_4$. The compound Co_2W begins to form at 1150°C and is stable at temperatures below 1350°C. At 1350°C and above, Co_2W decomposes, the products being $BaFe_{12}O_{19}$ and $Co_6Fe_1^{2+}Fe_2^{3+}O_4$. The decomposition is due to the reduction of Fe^{3+} to Fe^{2+} at high temperatures. Orig. art. has: 7 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 26Feb65/ ORIG REF: 004/ OTH REF: 001

Card 1/1

UDC: 546.732'723'431—31:539.26

VINNIK, M.I.
  CA

Heterogeneous acid-base catalysis in multimolecular films. N. M. Chirkov and M. I. Vinnik. *Doklady Akad Nauk S.S.S.R.* 58, 1697-1700(1947).—Transformation of AcH into paraldehyde was studied between 60° and 100°. When completely pure, paraldehyde does not decomp. into AcH at these temps. Treatment of app. walls with HCl vapor catalyzes the decompn., and the rate rises sharply with increase of temp. (results given graphically). When $P/P_{decompn}$ is over 0.4, the reaction-rate const. rises rapidly with increased vapor pressure of paraldehyde: $K = K_{eff}/P_4$. Up to P/P_4 0.3 the content of HCl goes linearly with the amt. of adsorbed HCl, but above 0.3 the linearity does not hold, and it is estd. that in the expts. up to 60 mol. layers of HCl were adsorbed on the walls, at P/P_4 of 0.75. At P/P_4 0.5–0.6 the activation energy of depolymerization is 20 kcal./mole. The catalytic activity of the wall-adsorbed HCl drops with introduction of H_2O vapor; a smaller decline occurs with EtOH vapors. Apparently in these cases HCl dissocs. and does not participate in the catalysis.   G. M. Kosolapoff

VINNIK, M. I.

USSR/Physical Chemistry - Polymerization of butylene on phosphoric acid.

Card 1/1

Authors   : Chirkov, N. M. and Vinnik, M. I.

Title   : Kinetics and mechanism of reactions in the presence of thin films
              of non-volatile acids.

Periodical : Dokl. AN SSSR 95, 6, 1243 - 1247, 21 Apr 1954

Abstracts   : Thin films of non-volatile acids coating hard bodies behave as
              continuous heterogenous catalysts. The article gives partial data
              on an experiment performed in a laboratory and describes conditions
              under which the process mentioned can be observed. Diagrams.

Institution : Institute of Chemical Physics of the Acad. of Scs. of the USSR

Submitted   : 13 Feb,1954

USSR/Chemistry - Physical chemistry

Card   1/1   Pub. 22 - 41/56

Authors   : Churkov, N. M., and Vinnik, M. I.

Title   : Kinetics and mechanism of reactions in the presence of thin films of non-
              volatile acids. The kinetic equation for isobutylene isomerization over
              H_3PO_4

Periodical : Dok. AN SSSR   99/5, 823-826, Dec 11, 1954

Abstract   : The kinetic laws governing the process of isobutylene polymerization at
              $40 - 90°$ temperatures and $40 - 600$ mm mercury column pressures in the pre-
              sence of an acid (H_3PO_4) catalyst are explained. A kinetic equation is
              presented which makes it possible to describe not only the initial rates of
              polymerization but also the kinetic curves provided certain constants form-
              ulated for different initial isobutylene pressures are used at a given
              temperature and acid concentration. The independence of the rate of re-
              action from the pressure of the reagents in the case of a heterogeneous film
              catalyst was found to be the result of a maximum possible absorption of the
              olefine by the acid. One USSR reference (1954). Table; graphs.

Institution: Academy of Sciences USSR, Institute of Chemical Physics
Presented by: Academician V. N. Kondratyev, June 29, 1954

Vinnik, M. I.

Kinetics and mechanism of reactions catalysed by thin films of non-volatile acids: polymerization of isobutylene in contact with aqueous sulphuric acid. N. M. Chirkov and M. I. Vinnik (Dokl. Akad. Nauk. SSSR, 1955, 105, 766—769).—Experiments were carried out on the polymerization of isobutylene in vessels packed with quartz or glass tubes moistened with aq. H_2SO_4 of various concn. There was a linear relation log $K_1 + 1.7\ H_0 =$ const., between the bimolecular velocity const. K_1 and the acidity function H_0 of the acid film. The plot of $\sqrt{v_i}/P$ against $\sqrt{v_i}$, where v_i is the initial reaction velocity (in mm./min.) and P is the isobutylene pressure (in mm.) is linear at a given temp. and acid concn. A general expression is obtained for the initial reaction rate with 70% H_2SO_4.   F. W. KIRKBRIDE.

Inst. Chem. Phys., AS USSR

VINNIK, m.l.

12216* (Russian.) Problem of Preparing Pure Boron Fluo-
ride. K voprosu o poluchenii chistogo ftoristogo bora. M. I.
Vinnik, G. B. Manelis, R. S. Riabova, G. D. Tantsyrev, and
N. M. Chirkov. Zhurnal Neorganicheskoi Khimii, v. 1, no. 4,
1956, p. 628-631.
Method of preparing KBF₄ and preparing and purifying BF₃.
Mass spectral and infra-red analyses.

Vinnik, M.I.

USSR/Physical Chemistry - Solutions.   Theory of Acids and Bases, B-11

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 489

Author: Vinnik, M. I., Kruglov, R. N., and Chirkov, N. M.

Institution: None

Title: Acidity of Aqueous Solutions of Hydrobromic and Hydrochloric Acid

Original
Periodical: Zh. fiz. khimii, 1956, Vol 30, No 4, 827-836

Abstract: The indicator method was used in measuring the acidity H_0 of aqueous solutions of HBr(I) and HCl(II) over the concentration ranges 0.275-56.52 wt percent and 8.9-40.47 wt percent, respectively. From the experimental values of H_0, values were calculated for $(f_{H_3O} + f_B)f_{BH}$ (III) and $f_B/(f_A - f_{BH})$ (IV). The standard state is chosen such that the acid ionization constant $\overline{HA}/K_4 = 1$. It is shown that the ratio III increases with increasing concentrations of I and II and the ratio IV is practically independent of the concentrations of I and II and is equal to one. For aqueous solutions of I and II up to 16-17 ml, the acidity H_0 is numerically equal to $\log(a_{HA}/c_A)$, where a_{HA} is the

Card 1/2

USSR/Physical Chemistry - Solutions. Theory of Acids and Bases, B-11

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 489

Abstract: activity of the acid determined from the emf or from the vapor pressure and c_{A^-} is the concentration of the halide ion.

Card 2/2

Vinnik, M.I.

20-6-27/47

AUTHORS: Vinnik, M. I. , Ryabova, R. S. , Chirkov, N. M.

TITLE: The Kinetics of the Acid-Catalytic Decarbonylation of Benzoyl Form-
                ic Acid (Kinetika kislotno-kataliticheskogo dekarbonilirovaniya
                benzoilmurav'inoy kisloty)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 6, pp. 1017 - 1020 (USSR)

ABSTRACT: The present paper investigates the determination of particles par-
                ticipating in the elementary act of the acid processes and com-
                pares the constant of speed with the concentration of the particles.
                The reactions $C_6H_5COCOOH \rightarrow CO + C_6H_5COOH$ were selected as model.
                The solutions of benzoyl formic acid in water and in diluted solu-
                tions of sulphuric acid do not absorb in the visible range of the
                spectrum. On dissolution of $C_6H_5COCOOH$ in concentrated H_2SO_4 (80 -
                - 90 %) an absorption in the visible range of the spectrum appears.
                The absorption coefficient of benzoyl formic acid considerably in-
                creases with increasing concentration of H_2SO_4. In the present
                work the speed of the decarbonylation of solutions of $C_6H_5COCOOH$ in
                H_2SO_4 was determined from the speed of the decrease in the optical
                density of the solution when $\lambda = 400$ m μ. The optical density
                was measured by the spectrometer ($\Phi - 4$) in quartz cuvettes. A
                diagram illustrates a typical kinetic curve of the decarbonylation

Card 1/3

20-6-27/47

The Kinetics of the Acid-Catalytic Decarbonylation of Benzoyl Formic Acid

process (the dependence of the optical density D of the solution on the time t) and its logarithmic anamorphosis. The influence of the acidity h_0 upon the constant K of the speed was investigated in the range of concentrations of from 85,46 to 99,94 % of H_2SO_4 at $T = 15°C$. The corresponding results are illustrated by a diagram. In the range from $h_0 = 10^{8,06}$ to $h_0 = 10^{9,4}$ the dependence between $\lg K$ and the acidity function H_0 is linear: $\lg K + 1,8 H_0 =$ = const. At higher values of acidity a deviation from the linearity was observed. The temperature dependence of K for the solutions of $C_6H_5COCOOH$ in 98,80; 96,2; 92;89,77 and 85,46 % H_2SO_4 were determined in a narrow range of temperature. These data are in agreement with the Arrhenius (Arrenius) equation. Benzoyl formic acid is supposed to exist in different forms in the concentrated and diluted solutions of H_2SO_4. In diluted H_2SO_4 it is supposed to exist in a nonionized state, but with increasing acidity of the medium it is ionized. Then the authors report on the determination of the constant of alkalinity. There are 4 figures, 1 table, and 1 non-Slavic reference.

Card 2/3

20-6-27/47

The Kinetics of the Acid-Catalytic Decarbonylation of Benzoyl Formic Acid

ASSOCIATION: Institute of Chemical Physics AS USSR
              (Institut khimicheskoy fiziki Akademii nauk SSSR)

PRESENTED: June 17, 1957, by V. N. Kondrat'yev, Academician

SUBMITTED: June 12, 1957

AVAILABLE: Library of Congress

Card 3/3

20-119-1-26/52

AUTHORS: Vinnik, M. I., Manelis, G. B., Epple, G. V., Chirkov, N. M.

TITLE: Kinetics of Isobutylene Polymerization in the Presence of Boron Fluoride Etherate (Kinetika polimerizatsii izobutilena v prisutstvii efirata ftoristogo bora)

PERIODICAL: Doklady Akademii Nauk SSSR,1958,Vol.119,Nr 1,pp.98-100(USSR)

ABSTRACT: The present paper investigates the polymerization of iC_4H_8 in the presence of a complex compound of the diethyl ether with boron fluoride: $(C_2H_5)_2O.BF_3$. The catalyst $(C_2H_5)_2O.BF_3$ in the form of a thin adsorbed film was applied to the surface of little tubes of melted quartz for the purpose of avoiding diffusion-conditioned disturbances. The reaction container with an insertion of little quartz tubes was evacuated to a pressure of from 10^{-4} - 10^{-5} mm of mercury column previous to the experiment. At first the necessary pressure of ether vapor was produced in the reaction container and then the boron fluoride was introduced. In every experiment the pressures of etherate ($P^g_{etherate}$) of boron fluoride ($P^g_{BF_3}$), of ether in the gaseous phase (P^g_{ether}), corresponding

Card 1/3

20-119-1-26/52

Kinetics of Isobutylene Polymerization in the Presence of Boron Fluoride
Etherate

to the equilibrium and the quantity of the etherate($P^{fl}_{etherate}$)
condensed on the surface were determined. The data used for
the determination of these values are given in brief. Special
attention was paid to the production of the pure reagents
which must not contain any traces of moisture. The reaction
velocity was expressed by the reduction of the isobutylene
pressure referring to 1 mole of the adsorbed etherate. A dia-
gram shows the kinetic curve and its anamorphosis for the
polymerization process of iC_4H_8 in the presence of the
etherate $(C_2H_5)_2O \cdot BF_3$. If $t = 70^\circ C$ and $P_{iC_4H_8}$ is small

(up to 100 - 1500 mm of mercury column), the kinetic equation
up to a 40 - 50 per cent transformation can easily be ex-
pressed by a secondary order equation. The constant of velo-
city K_1 thus determined does not depend on the initial pres-
sure of the iC_4H_8. The influence of ether on the catalytic
activity of the $(C_2H_5)_2O \cdot BF_3$ is similar to the influence of
water on the acidity of mineral acids (phosphoric acid, sul-
furic acid etc.). Such an intense influence of the ether -
even at low concentrations - can only be explained by its

Card 2/3

20-119-1-26/52

Kinetics of Isobutylene Polymerization in the Presence of Boron Fluoride Etherate

basic properties. A diagram and a table illustrate the dependence of the constant K_1 of the polymeriztion velocity on the pressure of boron fluoride in gaseous phase corresponding to the equilibrium. The etherate of boron fluoride is an effective catalyst for the polymerization of iC_4H_8. Judging from the catalytic activity the etherate must have the properties of an intense acid. There are 3 figures, 1 table, and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
          (Institute for Chemical Physics AS USSR)

PRESENTED: August 7, 1957, by V. N. Kondrat'yev, Member, Academy of
          Sciences, USSR

SUBMITTED: August 1, 1957

Card 3/3

BEL'SKIY, V.Ye.; VINNIK, M.I.

Kinetic method of the analysis of mixtures of acetic anhydride and acetic acid. Zhur. anal. khim. 19 no.3:375-378 '64.   (MIRA 17:9)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.

5 (4)
AUTHORS:

Manelis, G. B., Vinnik, M. I.,
Chirkov, N. M. (Moscow)

SOV/76-33-5-11/33

TITLE:

The Acid Function of the System Diethyl Ether - BF_3
(Funktsiya kislotnosti sistemy dietilovyy efir - BF_3)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5,
pp 1030-1034 (USSR)

ABSTRACT:

The acid function was investigated over a wide concentration range by using various indicators: 2,4-dinitroaniline, 2,4-dichloro-6-nitroaniline, 5-Cl-2-nitroaniline, and o-nitroaniline. The measurement was carried out by means of the spectrophotometer SF-4 at room temperature. The compound $(C_2H_5)_2OBF_3$ was synthesized in a quartz cuvette. Table 1 shows the dependence of $\lg \frac{C_B}{C_{BH^+}}$ on the concentration of the ether compound for the individual indicators (C_B = concentration of the non-ionized indicator, C_{BH^+} = concentration of the ionized indicator). The determination of the acid function

Card 1/3

The Acid Function of the System Diethyl Ether - BF$_3$ SOV/76-33-5-11/33

was carried out assuming that the ether compound investigated is a strong acid and that indicators in strong acids have the same value of pK_B (negative logarithm of the basicity constant). Therefore, $pK_B = -4.4$ was put for 2,4-dinitroaniline, and pK_B for the other indicators determined by the usual method. The possible inaccuracies of the determination are discussed. Table 2 and a figure give the results of the determination. The reasons for the deviation of the data obtained from the results mentioned in reference 3 could not be found. Starting from the equilibrium constant the equation of the acid function for $(C_2H_5)_2OBF_3$ in $(C_2H_5)_2O$ is deduced:

$$H_o = lg \sqrt{k_1\left(\frac{100}{[AH]} - 1\right) + k_2 \cdot (C_2H_5)_2OBF_3}$$ surpasses the phosphoric acid because of its acidity degree ($H_o = -6.22$ at 100°). The quantitative data of the polymerization rate of isobutylene are in good agreement with it. There are 1 figure, 2 tables, and 7 references, 5 of which are Soviet and 1 Czechoslovakian.

Card 2/3

The Acid Function of the System Diethyl Ether - BF_3 SOV/76-33-5-11/33

ASSOCIATION: Akademiya nauk SSSR Institut khimicheskoy fiziki Moskva
(Academy of Sciences of the USSR, Institute of Chemical
Physics, Moscow)

SUBMITTED: October 9, 1957

Card 3/3

SOV/76-33-9-17/37

5(4)
AUTHORS: Vinnik, M. I., Ryabova, R. S., Chirkov, N. M.

TITLE: Kinetics and Mechanism of Reactions in Concentrated Strong
            Acid Media. I. Kinetics of Dehydration of o-Benzoyl Benzoic
            Acid in Concentrated Solutions of Sulphuric Acid

ABSTRACT: An investigation was made of the kinetics of catalytic de-
             hydration of o-benzoyl benzoic acid (I) to anthraquinone in
             sulphuric acid (79.92% to 100%) at temperatures of from 50°
             to 97.5°C. The spectrophotometrical method (spectrophotometer
             type SF-4) was applied and the dependence of the dehydration
             rate constant on the acidity of the medium and on temperature
             was determined (Table 1). Three forms of (I) were found to occur
             in the state of equilibrium in the case of (I) being ionized in
             highly acid medium - a non-ionized form BOH, a protonized form
             BOH_2^+, and a dehydrated protonized form B^+. The ratio between
             the concentrations of the three forms is determined by the
             acidity of the medium and the activity of water. The limiting
             stage of the process is the isomerization of the dehydrated

Card 1/3

Kinetics and Mechanism of Reactions in Concentrated Strong Acid Media.
I. Kinetics of Dehydration of o-Benzoyl Benzoic Acid in Concentrated Solutions
of Sulphuric Acid

form B^+. A specification is given of the values of the actual
rate constants at $25^\circ C$, as obtained by extrapolation (according
to the Arrhenius Law), further, the concentration of the three
forms of (I) at various sulphuric acid concentrations (Table 2),
as well as the dependence of the ionization constant on acidity
(Table 3). By spectrometric and kinetic methods the following
values were obtained:

$$K_1 = \frac{a_{H^+} \, a_{BOH}}{a_{BOH_2^+}} = 4 \cdot 10^8; \quad K_2 = \frac{a_{H^+} \, a_{BOH_2^+}}{a_{B^+} \, a_{H_3O^+}} = 1 \cdot 10^9$$

Values were obtained for the true activation energy
$E_w = 24.5$ kcal/mol (characteristic of the energy balance of
the elementary act of the isomerization of dehydrated (I)-ion
to anthraquinone), the sum of the ionization heats
$Q_1 + Q_f = 6.5$ kcal/mol, and the value of the true preexponential

Card 2/3   factor $A = 7 \cdot 10^{11}$ sec^{-1}. There are 7 figures, 3 tables, and

SOV/76-33-9-17/37

Kinetics and Mechanism of Reactions in Concentrated Strong Acid Media.
I. Kinetics of Dehydration of o-Benzoyl Benzoic Acid in Concentrated Solutions
of Sulphuric Acid

           8 references, 1 of which is Soviet.

ASSOCIATION: Akademiya nauk SSSR,Institut khimicheskoy fiziki,Moskva
               (Academy of Sciences of the USSR, Institute of Chemical
               Physics, Moscow)

SUBMITTED: February 22, 1958

Card 3/3

5(4)

AUTHORS: Utyanskaya, E. Z., Stepanyants, A. U.;   SOV/20-124-5-38/62
             Vinnik, M. I., Chirkov, N. M.

TITLE: The Calculation of the Function of Acidity and the Molecular
             Composition of Hydrofluoric Acid From the Data of the Nuclear
             Magnetic Resonance of F^{19} (Raschet funktsii kislotnosti i
             molekulyarnogo sostava plavikovoy kisloty po dannym yadernogo
             magnitnogo rezonansa F^{19})

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1095-1098
             (USSR)

ABSTRACT: Hammett's function of acidity is measured by means of the indi-
             cator method and amounts to $x_0 = -\lg a_{H+}(f_B/f_{BH+})$. Here f_B
             and f_{BH+} denote the coefficients of the activities of the
             ionized and not ionized forms of the indicator; a_{H+} — the proton
             activity in the given medium. In the aqueous solutions of HF
             there are the following kinds of equilibrium: $HF \rightleftarrows H^+ + F^-$ (2);
             $HF + F^- \rightleftarrows HF_2^-$ (3); $K_1 = a_{H+}a_{F^-}/a_{HF}$ (4); $K_2 = a_{HF_2^-}/a_{HF}a_{F^-}$ (5).

Card 1/3

The Calculation of the Function of Acidity and the   SOV/20-124-5-38/62
Molecular Composition of Hydrofluoric Acid From the Data of the Nuclear

Magnetic Resonance of F^{19}

Here $K_1 = 6.89 \cdot 10^{-4}$ and $K_2 = 2.695$ denote the constants
of equilibrium, expressed in activities. From the dissociation
equation (4) of hydrofluoric acid there follows:
$-lg\ a_{H^+} = -lg\ K_1 + lg\ (a_F/a_{HF})$. If the quantities K_1, a_{HF},
and m_{F^-} are known, it is possible to calculate the acidity
function H_0. For the purpose of determining quantitative re-
sults concerning the composition and the acidity of concen-
trated aqueous solutions of HF the authors carried out
measurements of the chemical shifts of the resonance of F^{19}
in aqueous solutions of hydrofluoric acid of different concen-
trations. For the chemical shift to be observed and also for
a system consisting of several interacting components expres-
sions are written down. The chemical shift to be observed is

of the order of magnitude $(5.95\ to\ 6.05) \cdot 10^{-4}$ for the
various concentrations of hydrofluoric acid. In order, therefore
to be able to determine the acidity function with an accuracy

Card 2/3

The   Calculation of the Function of Acidity and the   SOV/20-124-5-38/62
Molecular Composition of Hydrfluoric Acid From the Data of the Nuclear
Magnetic Resonance of F^{19}

of ±0.05. it is necessary to know the observable chemical
shift with an accuracy of ±0.03·10⁻⁴. Measurements were carried
out in a magnetic field of ~3,300 oersted. In the course of
these measurements a saw-tooth modulation of the magnetic main
field was used. The results obtained by measurements are shown
by a table and by a diagram. At concentrations of up to 30 %
the variations of the chemical shift are within the limits of
measuring errors. The results obtained by calculating molecular
composition and the acidity function are shown by tables and
diagrams. There are 4 figures, 2 tables, and 9 references,
5 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute
of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: October 29, 1958, by V. N. Kondrat'yev, Academician

SUBMITTED: October 22, 1958

Card 3/3

5(4)
AUTHORS:

Vinnik, M. I., Zarakhani, N. G., Medvetskaya, I. M., Chirkov, N. M.

TITLE: The Role of Salt Formation in Acid-catalytic Processes. The Kinetics of Cyclohexanone Oxime Hydrolysis (O roli soleobrazovaniya v kislotno-kataliticheskikh protsessakh. Kinetika gidroliza tsiklogeksanonoksima)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1300-1303 (USSR)

ABSTRACT:

The hydrolysis of amides and oximes is accelerated by acids and bases. An anomalous dependence of the reaction rate upon the acidity of the medium is observed in acid hydrolysis (Refs 1-4). The value of the reaction constant increases with increasing HCl-concentration up to a certain amount and then decreases again. An investigation of the bimolecular reaction between the "protonized" molecule of the reagent and water :

$$RCONH_2 + H^+ \rightleftharpoons RCONH_3^+ \;;\; RCONH_3^+ + H_2O \rightleftharpoons M^* \xrightarrow{\;k\;} \text{product}$$
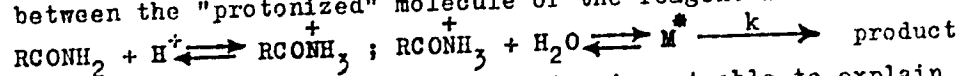
of hydrolysis shows that this reaction is not able to explain the phenomena observed. The authors assume that the "protonized" form of the reagent is able to combine with the acid anion to a

Card 1/2

The Role of Salt Formation in Acid-catalytic Processes. SOV/20-126-5-43/67
The Kinetics of Cyclohexanone Oxime Hydrolysis

non-dissociated salt. In order to prove the rightness of this
assumption, the hydrolysis of cyclohexanone oxime was spectro-
photometrically investigated at $\lambda = 222$ mμ under the catalytic
effect of hydrochloric acid. A kinetic curve is derived (Fig 1)
under consideration of a monomolecular reaction of the hydro-
lysis of the oxime and (in the case of a reverse process) of
the bimolecular oxime formation from cyclohexanone and hydro-
xylamine. Table 1 and figure 2 show the experimental results
and confirm that the reaction constant of hydrolysis passes
through a maximum. A decreasing rate of hydrolysis (Table 2)
was brought about by experiments made with the addition of NaCl
and LiCl. Therefore, salt formation inhibits acid catalytic
processes by reducing the concentration of the reactive form of
the reagent. In the hydrolysis of cyclohexanone oxime, the stage
of isomerization of the "protonized" form has a limiting effect.
There are 2 figures, 2 tables, and 7 references, 2 of which are
Soviet.

PRESENTED: February 26, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: February 20, 1959
Card 2/2

Vinnik M.I.

VINNIK, M.I.; MANELIS, G.B.; CHIRKOV, N.M.

Catalytic properties of complex compounds of boron fluoride. Probl.
kin. i kat. 10:285-290 '60.   (MIRA 14:5)

1. Institut khimicheskoy fiziki AN SSSR.
                        (Boron fluoride)

VINNIK, M.I., kand.khimicheskikh nauk; GONIKBERG, M.G., doktor khimicheskikh
nauk

Mechanism of heterolytic reactions. Vest.AN SSSR 30 no.9:
115-118 S '60.   (MIRA 13:9)
            (Chemical reactions, Rate of)

VINNIK, M.I.; ZARAKHANI, N.G. (Moscow)

Kinetics and mechanism of reactions in concentrated strong acid
media. Part 3: Kinetics of the hydrolysis of cyclohexanone oxime
in hydrochloric and sulfuric acid media. Zhur. fiz. khim. 34 no.12:
2671-2681 D '60.   (MIRA 14:1)

1. AN SSSR, Institut khimicheskoy fiziki.
        (Cyclohexanone)   (Acids, Inorganic)

VINNIK, M.I.; MOISEYEV, Yu.V.; PALAGINA, L.V.

Kinetics of caprolactam hydrolysis in aqueous solutions of KOH.
Dokl.AN SSSR 138 no.1:149-152 My-Je '61.   (MIRA 14:4)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom
V.N.Kondrat'yevym.
                    (Hexamethylenimine)

VINNIK, M.I.; ZARAKHANI, N.G. (Moscow)

Kinetics and mechanism of reactions in concentrated strong
acid media. Part 8. Zhur. fiz. khim. 38 no.4:907-915 Ap '64,
                                            (MIRA 17:6)

1. Akademiya nauk SSSR, Institut khimicheskoy fiziki.

ZARAKHANI, N.G.; VINNIK, M.I. (Moscow)

Composition and equilibria in aqueous solutions of carboxylic
acids. Zhur. fiz. khim. 38 no.3:632-638 Mr '64.

(MIRA 17:7)

1. Institut khimicheskoy fiziki AN SSSR.

VINNIK, M.I.; MOISEYEV, Yu.V.; PALAGINA, L.V.

Kinetics and the mechanism of γ-butyrolactam hydrolysis in potassium hydroxide solutions. Kin. i kat. 5 no.2:253-262 Mr-Ap '64.
(MIRA 17:8)

1. Institut khimicheskcy fiziki AN SSSR.

BEL'SKIY, V.Ye.; IVANKOVA, N.I., VINNIK, M.I.

Kinetics of the acylation of nitroanilines in boron fluoride
solutions in glacial acetic acid. Zhur. fiz. khim. 39
no.6:1426-1431 Je '65.   (MIRA 18:11)

1. Institut khimicheskoy fiziki AN SSSR. Submitted March
10, 1964.

LIBROVICH, N.B.; VINNIK, M.I.

Activity coefficients of the nonionized form of some indicators
used in measuring the acidity of aqueous solutions of sulfuric
acid. Dokl. AN SSSR 166 no.3:647-650 Ja '66.

(MIRA 19:1)

1. Institut khimicheskoy fiziki AN SSSR. Submitted May 24, 1965.

ZAKENKO, G., BRAILIN, V.V.; VOLKIK, M.I.

Kinetics and mechanism of reactions taking place in concentrated strong acid media. Part 10. Zhur. fiz. khim. 39 no.8.1863-1868   Ag '65.   (MIRA 18:9)

1. Institut khimicheskoy fiziki AN SSSR.

MOISEYEV, Yu.V.; ORLOV, I.G.; VINNIK, M.I.

Effect of nonelectrolytes on the infrared spectrum of water. Part 1:
Hydration of butyrolactam in aqueous, alkaline, and acid solutions.
Zhur. struk. khim. 6 no.3:387-390 My-Je '65.

(MIRA 18:8)

1. Institut khimicheskoy fiziki AN SSSR.

ZARAKHANI, N.G.; BUDYLINA, V.V.; VINNIK, M.I.

Kinetics and mechanism of reactions taking place in a medium of
strong concentrated acids. Part 9. Zhur.fiz.khim. 39 no.7:1561-
1565 Jl '65.   (MIRA 18:8)

1. Institut khimicheskoy fiziki AN SSSR.

VINNIK, M.I.; BEL'SKIY, V.Ye.; IVANKOVA, N.I.

2,4,6-Trinitroaniline acylation kinetics and the determination of equilibrium concentrations of ions in solutions of boron fluoride in acetic acid. Zhur.fiz.khim. 39 no.7:1624-1630 Jl '65.

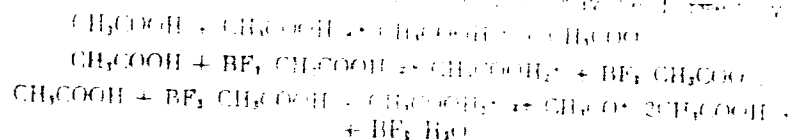(MIRA 18:8)

1. Institut khimicheskoy fiziki AN SSSR.

AUTHOR: Vinnik, M. I.; Bel'skiy, V. Ye.; Ivankova, N. L.

TITLE: Kinetics of acylation of 2,4,6-trinitroaniline and determination of equilibrium ion concentrations in acetic acid solutions of boron fluoride

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 7, 1965, 1624-1630

TOPIC TAGS: acylation, trinitroaniline, trinitroanilide, boron fluoride, acetic acid

ABSTRACT: The acylation of 2,4,6-trinitroaniline in concentrated boron fluoride solutions in glacial acetic acid is a reversible process in which the conversion of 2,4,6-trinitroaniline to the anilide depends on the BF_3 content of the solution. Conversion can be increased by adding acetic anhydride or decreased by adding water. These facts were utilized to calculate the equilibrium ion concentrations in solutions containing from ... the following processes:

$$CH_3COOH + CH_3COOH \rightleftharpoons ... + CH_3COO$$
$$CH_3COOH + BF_3 \ CH_3COOH \rightleftharpoons CH_3COOH_2 + BF_3 \ CH_3COO$$
$$CH_3COOH + BF_3 \ CH_3COOH + ... \rightleftharpoons CH_3CO \cdot 2CH_3COOH + BF_3 \ H_2O$$

Card 1/2

L 63467-65

ACCESSION NR: AP5019790

The equilibrium of the acylation process is represented by the equation
2,4,6-trinitroaniline + $BF_3 \cdot CH_3COOH \rightleftarrows$ 2,4,6-trinitroanilide + $BF_3 \cdot H_2O$. From the depen-
dence of the anilide: aniline equilibrium ratio on the amount of anhydride added,
the concentrations of the acylium ions were

creases, the rate constant

that the acylium ion concentration

of the anilide

charge of the acidity

medium studied. The equi

it

ASSOCIATION: Leningrad chemical

SUBMITTED: Maira

Card 2/2

BEL'SKIY, V.Ye.; VINNIK, M.I. (Moscow)

Acid properties of boron fluoride solutions in acetic acid. Zhur.fiz. khim. 38 no.8:1950-1955 Ag '64.   (MIRA 18:1)

1. Institut khimicheskoy fiziki AN SSSR.

MOISEYEV, Yu.V.; BAKHRAKH, E.Ya.; VINNIK, M.I. (Moscow)

Kinetics of hydrolysis of N-methylacetamide in KOH aqueous solutions. Zhur. fiz. khim. 37 no.4:784-790 Ap '63.
(MIRA 16:7)

1. Akademiya nauk SSSR, Institut khimicheskoy fiziki.

VINNIK, M.I.; RYABOVA, R.S. (Moscow)

Use of the indicator method for determining the concentration
of ions and nondissociated particles. Zhur. fiz. khim. 38 no.3:
606-615 Mr '64.   (MIRA 17:7)

1. Institut khimicheskoy fiziki AN SSSR.

BEL'SKIY, V.Ye.; VINNIK, M.I.

Kinetics and the mechanism of acylation of aromatic amines in
the system acetic acid - acetic anhydride. Izv.AN SSSR.
Ser.khim. no.1:40-45 Ja '64.   (MIRA 17:4)

1. Institut khimicheskoy fiziki AN SSSR.

ZARAKHANI, N.G.; VINNIK, M.I.

Determination of the dimer concentration in aqueous solutions
of formic acid. Zhur. fiz. khim. 37 no.11:2550-2553 N'63.
(MIRA 17:2)

1. Institut khimicheskiy fiziki AN SSSR.